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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/256,034	02/23/1999	MARIE ANGELOPOULOS	YO998-056	9289

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EXAMINER

CHU, JOHN S Y

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 04/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/256,034

Applicant(s)

SIMONS ET AL.

Examiner

John S. Chu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 9-17 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This Office action is in response to the petition filed October 31, 2002 and the letter to withdrawal the abandonment mailed December 16, 2002.

1. Prosecution in this case is reopened in light of the Appeal Brief have fatal defects and is not in proper condition to be sent to the Board of Patent Interferences and Appeals. The defects will be discussed hereafter.

Election/Restrictions

2. Newly submitted claim 19 added after the Final rejection of November 17, 2000 at the same time the Appeal Brief was filed in June 8, 2001 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Applicants state in Paper No. 16(the amendment filed June 8, 2001 simultaneously with the Appeal Brief of June 8, 2001) that claim 19 is a rewrite of the second claim 8 (original claims improperly filed two claim 8's), wherein applicants argue that the Examiner "has not noted this nor objected to this" improper numbering of claims.

To the contrary the Examiner notes that in the original restriction requirement mailed March 28, 2000, Paper No. 5, Group I includes claims 1-8 and 18, Group II is indicated to be claims 8[9]-16 and Group III is claim 17. Here the Examiner notes that the restriction lists claim 8 in Groups I and II indicating the acknowledgement that there are two claims numbered as "8". It is further indicated that it is believed that the second claim 8 should be numbered claim 9 as seen by the brackets around [9] of Group II. Applicants properly elected Group I, claims 1-8 and 18 for prosecution (see Paper No. 6, received in the USPTO on April 11, 2000. Claims 9-17 were withdrawn from consideration (see Paper No. 7, mailed June 22, 2000). It is understood

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that Group I was elected to the method of coating and that the method of forming a pattern in Group II was non-elected.

Thus Applicants most recently in the Appeal Brief of February 6, 2002 have improperly attempted to have method claims to forming a pattern (claims 9-17) that were previous withdrawn from consideration included in the Appeal being sent to the Board of Interferences and Appeals. Clearly the embodiments of new claim 19 have not been rejected and considered at all during the prosecution, so Applicant have no right to appeal a non-rejected and non-considered claim.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 19 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-8 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 3 recites “in” which is confusing as to how to dispose a resist layer “in” the layer of material if the layer are to be substantially separated and not intermixed. The intended term appears to be “on”.

Claim 7 recites the limitation “wherein said material” in claim 7. There is insufficient antecedent basis for this limitation in the claim because it is unclear if it is referring to the “layer of material” or the “resist material”.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 5, 7, and 18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over VIKESLAND.

The claimed invention is drawn to a method comprising disposing on a surface a layer of material; disposing in said layer of material a resist material; said layer of material having a crosslink density sufficiently high that said layer of material and said resist do not substantially intermix.

VIKELAND discloses in Example 1 of column 6, lines 6-68 a photosensitive coating having two photosensitive layers wherein the first layer comprises a novolak phenolic resin designated as the tradename of “Resinox”. The Examiner notes that there is a presence of DDI-1410, which is an aliphatic diisocyanate compound. Polyurethanes are known to be formed by reacting a diol compound with a diisocyanate compound. Clearly coating and heating the novolak resin in the presence of a diisocyanate compound a crosslinking reaction occurs between

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the novolak resin (having phenolic groups) and the diisocyanate compound in the first layer (see column 5, lines 10 – 54, particularly lines 25-33 for the disclosure of diisocyanates as a crosslinking ingredient. This disclosure is asserted by inherency to meet the claimed “layer of material” coated on the “surface” of claim 1.

The second layer is disclosed in column 6, lines 24-33 comprising a naphthoquinone diazide photosensitizer as the photosensitizer. This photosensitizer would inherently meet the recited material index of refraction as recited in claim 7. The energy beams of claims 5 and 7 are met by the disclosure found in Example 1 wherein it is known that the radiation source is a UV source.

It would have been *prima facie* obvious to one of ordinary skill in the art of photosensitive materials to duplicate the method found in Example 1 to coat a surface wherein the first layer and second layer is crosslinked, thus maintaining separate layers that don't intermix and reasonably expect a photosensitive multiplayer resist material having improved properties and performance as disclosed in VIKESLAND.

Claims 6 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

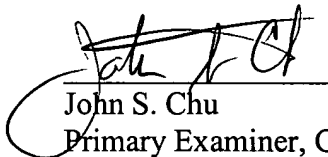
None of the prior art references of record disclose the use of electron beam to expose the photosensitive material nor discloses forming sub 200 nm patterns as claimed in claim 8.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

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The fax phone number for the USPTO is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1700.



John S. Chu
Primary Examiner, Group 1700

J.Chu
April 5, 2004